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not exceeding 20 pCi/m²-s as required by 40 CFR 192.32(b)(1)(ii). This monitoring shall be conducted using the procedures described in 40 CFR part 61, Appendix B, Method 115, or any other measurement method proposed by a licensee that the Nuclear Regulatory Commission or Agreement State approves as being at least as effective as EPA Method 115 in demonstrating the effectiveness of the permanent radon barrier in achieving compliance with the 20 pCi/m²-s flux standard.

(ii) When phased emplacement of the permanent radon barrier is included in the applicable tailings closure plan (radon), then radon flux monitoring required under §192.32(a)(4)(i) shall be conducted, however the licensee shall be allowed to conduct such monitoring for each portion of the pile or impoundment on which the radon barrier has been emplaced by conducting flux monitoring on the closed portion.

(5) Uranium byproduct materials shall be managed so as to conform to the provisions of:

(i) Part 190 of this chapter, "Environmental Radiation Protection Standards for Nuclear Power Operations" and

(ii) Part 440 of this chapter, "Ore Mining and Dressing Point Source Category: Effluent Limitations Guidelines and New Source Performance Standards, Subpart C, Uranium, Radium, and Vanadium Ores Subcategory."

(6) The regulatory agency, in conformity with Federal Radiation Protection Guidance (FR, May 18, 1960, pgs. 4402-4403), shall make every effort to maintain radiation doses from radon emissions from surface impoundments of uranium byproduct materials as far below the Federal Radiation Protection Guides as is practicable at each licensed site.

(b) *Standards for application after the closure period.* At the end of the closure period:

(1) Disposal areas shall each comply with the closure performance standard in §264.111 of this chapter with respect to nonradiological hazards and shall be designed¹ to provide reasonable assur-

¹The standard applies to design with a monitoring requirement as specified in §192.32(a)(4).

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ance of control of radiological hazards to

(i) Be effective for one thousand years, to the extent reasonably achievable, and, in any case, for at least 200 years, and,

(ii) Limit releases of radon-222 from uranium byproduct materials to the atmosphere so as to not exceed an average² release rate of 20 picocuries per square meter per second (pCi/m²s).

(2) The requirements of §192.32(b)(1) shall not apply to any portion of a licensed and/or disposal site which contains a concentration of radium-226 in land, averaged over areas of 100 square meters, which, as a result of uranium byproduct material, does not exceed the background level by more than:

(i) 5 picocuries per gram (pCi/g), averaged over the first 15 centimeters (cm) below the surface, and

(ii) 15 pCi/g, averaged over 15 cm thick layers more than 15 cm below the surface.

[48 FR 45946, Oct. 7, 1983, as amended at 58 FR 60355-60356, Nov. 15, 1993]

§ 192.33 Corrective action programs.

If the ground water standards established under provisions of §192.32(a)(2) are exceeded at any licensed site, a corrective action program as specified in §264.100 of this chapter shall be put into operation as soon as is practicable, and in no event later than eighteen (18) months after a finding of exceedance.

§ 192.34 Effective date.

Subpart D shall be effective December 6, 1983.

TABLE A TO SUBPART D OF PART 192

	pCi/liter
Combined radium-226 and radium-228	5

²This average shall apply to the entire surface of each disposal area over periods of at least one year, but short compared to 100 years. Radon will come from both uranium byproduct materials and from covering materials. Radon emissions from covering materials should be estimated as part of developing a closure plan for each site. The standard, however, applies only to emissions from uranium byproduct materials to the atmosphere.

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	pCi/liter
Gross alpha-particle activity (excluding radon and uranium)	15

Subpart E—Standards for Management of Thorium Byproduct Materials Pursuant to Section 84 of the Atomic Energy Act of 1954, as Amended

SOURCE: 48 FR 45947, Oct. 7, 1983, unless otherwise noted.

§ 192.40 Applicability.

This subpart applies to the management of thorium byproduct materials under section 84 of the Atomic Energy Act of 1954, as amended, during and following processing of thorium ores, and to restoration of disposal sites following any use of such sites under section 83(b)(1)(B) of the Act.

§ 192.41 Provisions.

Except as otherwise noted in § 192.41(e), the provisions of subpart D of this part, including §§ 192.31, 192.32, and 192.33, shall apply to thorium byproduct material and:

(a) Provisions applicable to the element uranium shall also apply to the element thorium;

(b) Provisions applicable to radon-222 shall also apply to radon-220; and

(c) Provisions applicable to radium-226 shall also apply to radium-228.

(d) Operations covered under § 192.32(a) shall be conducted in such a manner as to provide reasonable assurance that the annual dose equivalent does not exceed 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public as a result of exposures to the planned discharge of radioactive materials, radon-220 and its daughters excepted, to the general environment.

(e) The provisions of § 192.32(a) (3) and (4) do not apply to the management of thorium byproduct material.

[48 FR 45946, Oct. 7, 1983, as amended at 58 FR 60356, Nov. 15, 1993]

§ 192.42 Substitute provisions.

The regulatory agency may, with the concurrence of EPA, substitute for any

provisions of § 192.41 of this subpart alternative provisions it deems more practical that will provide at least an equivalent level of protection for human health and the environment.

§ 192.43 Effective date.

Subpart E shall be effective December 6, 1983.

APPENDIX I TO PART 192—LISTED CONSTITUENTS

Acetonitrile
 Acetophenone (Ethanone, 1-phenyl)
 2-Acetylaminofluorene (Acetamide, N-9H-fluoren-2-yl-)
 Acetyl chloride
 1-Acetyl-2-thiourea (Acetamide, N-(aminothioxymethyl)-)
 Acrolein (2-Propenal)
 Acrylamide (2-Propenamide)
 Acrylonitrile (2-Propenenitrile)
 Aflatoxins
 Aldicarb (Propenal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime)
 Aldrin (1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro(1 α ,4 α ,4a β ,5 α ,8 α ,8a β)-)
 Allyl alcohol (2-Propen-1-ol)
 Allyl chloride (1-Propane,3-chloro)
 Aluminum phosphide
 4-Aminobiphenyl ([1,1'-Biphenyl]-4-amine)
 5-(Aminomethyl)-3-isoxazolol (3(2H)-Isioxazolone,5-(aminomethyl)-)
 4-Aminopyridine (4-Pyridineamine)
 Amitrole (1H-1,2,4-Triazol-3-amine)
 Ammonium vanadate (Vanadic acid, ammonium salt)
 Aniline (Benzenamine)
 Antimony and compounds, N.O.S.¹
 Aramite (Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester)
 Arsenic and compounds, N.O.S.
 Arsenic acid (Arsenic acid H₃ AsO₄)
 Arsenic pentoxide (Arsenic oxide As₂ O₅)
 Auramine (Benzamine, 4,4'-carbonimidoylbis[N,N-dimethyl-])
 Azaserine (L-Serine, diazoacetate (ester))
 Barium and compounds, N.O.S.
 Barium cyanide
 Benz[c]acridine (3,4-Benzacridine)
 Benz[a]anthracene (1,2-Benzanthracene)
 Benzal chloride (Benzene, dichloromethyl-)
 Benzene (Cyclohexatriene)
 Benzenearsonic acid (Arsenic acid, phenyl-)
 Benzidine ([1,1'-Biphenyl]-4,4'-diamine)
 Benzo[b]fluoranthene
 (Benz[e]acephananthrylene)

¹The abbreviation N.O.S. (not otherwise specified) signifies those members of the general class not specifically listed by name in this appendix.